

WHAT IS CLAIMED IS:

1. The method for rendering using symplectic ray tracing, the method comprising the steps of:

fixing the location of observation, fixing view screen of observation;

practicing the symplectic ray tracing;

acquiring the information of the color where the light rays cross the surface of the objects; and

rendering the objects according to the information of the color acquired.

2. The method for rendering using symplectic ray tracing set forth in claim 1 wherein the step of practicing the symplectic ray tracing includes:

forming the Hamilton's canonical equation by applying the fast automatic differentiation techniques; and

practicing symplectic integration by applying the symplectic Euler method to the formed Hamilton's canonical equation.

3. The apparatus for rendering using symplectic ray tracing, the apparatus comprising:

the section of fixing the location of observation, and fixing view screen of observation;

the section of practicing the symplectic ray tracing,

the section of acquiring the information of the color where the light rays cross the surface of the objects,

the section of rendering the objects according to the information of the color acquired.

4. The apparatus for rendering using symplectic ray tracing set forth in claim 3

wherein the section of practicing the symplectic ray tracing is comprised by

the section of forming the Hamilton's canonical equation by applying the fast automatic differentiation techniques,

the section of practicing symplectic integration by applying the symplectic Euler method to the formed Hamilton's canonical equation.